the presence of the same or crossreacting epitopes in all fetal and neonatal samples tested. Fetal vascular epitopes, downregulated during ontogenesis, may be abnormally re-expressed in some adults with ALS. Such re-expression would not be without precedent: many tumours and fetal tissues are characterised by oncofetal proteins[9] and production of autoantibodies to them is not unusual.[10]

Our findings have the practical implication of the use of fetal necropsy material—instead of ALS patients' nerve biopsy specimens—as a suitable source of antigen to screen ALS serum samples and CSF for autoantibodies.

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Failure of ceftriaxone for amyotrophic lateral sclerosis

SIR,—I reported on June 6 (p 1417) that a 69-year-old man with amyotrophic lateral sclerosis improved strikingly on ceftriaxone therapy. The treatment was stopped for two weeks because acute pancreatitis developed. During this period the patient relapsed and all his signs and symptoms returned. Massive doses of 4 g of ceftriaxone were given for two months without any benefit. Hence, my initial report was premature.

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Avoidance of hyperergic reactions after booster tetanus toxoid vaccination

SIR,—Dr Topaloglu and colleagues (Jan 18, p 178) report a patient with optic neuritis and myelitis after a booster dose of tetanus toxoid. In another case, Read et al (May 2, p 1111) implicated tetanus toxoid booster in the induction of acute transverse myelitis. The correlation of tetanus antitoxin titre and the probability of side-effects of booster vaccinations is known, and several cases have been documented.[1,2]

The need for tetanus toxoid booster administration can be easily established by measurement of protective antitoxin antibodies in serum. We have measured such antibodies with ELISA and TR-FIA methods[3] in serum samples from 5858 subjects aged 17–60 years who underwent surgery for various reasons. Our data revealed very high antibody concentrations, especially in people aged 17–30 years (table). On the assumption of a protective antitoxin level of 0·1 IU/ml,[3] 97% of all subjects examined proved to be sufficiently protected, and about 30% of those aged 21–30 had antibody concentrations of over 6·3 IU/ml; many of these had antitoxin values up to 100 IU/ml and even higher. In these cases, booster injections seem to be contraindicated because of an increased risk of side-effects.

AGE DISTRIBUTION OF TETANUS-ANTITOXIN TITRES

Age (yr)	Titre range (IU/ml)					Total
	<0·1	0·11–0·50	0·51–1·0	1·1–6·3	>6·3	
17–20	13	50	62	337	159	661
21–30	160	347	369	2513	1444	4833
31–40	3	11	12	95	32	153
41–50	5	9	16	63	13	106
51–60	2	13	20	61	9	105
Total	183	430	479	3109	1657	5858

Vaccination side-effects are more intense the less vaccination is indicated. About 60% of side-effects might involve an allergic-hyperergic reaction of the immediate type, whereas in about 10% a delayed reaction and in about 30% of cases an Arthus reaction may occur.[4] In this context, it might be noteworthy that in samples with high IgG antibody titres we also find substantial amounts of IgE antibodies against tetanus toxoid (corresponding to RAST class 2–4).

We do not doubt the usefulness of vaccination recommendations for general tetanus prophylaxis or for tetanus protection in accidental injury and in military staff, but we feel that serological investigation of tetanus immune status is useful and objective in the evaluation of the need for revaccination and would reduce the risk of vaccination complications. Documentation of vaccination side-effects as well as specific antibody titres in certificates of vaccination would be useful.

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Secondary leukaemias after etoposide

SIR,—Pedersen-Bjergaard et al[1] attributed an increased risk of myelodysplasia and leukaemia to etoposide-containing regimens for germ-cell tumours. At our institution etoposide was administered to 45 patients with epithelial ovarian cancer either as second-line (n=31) after cisplatin/cyclophosphamide/epirubicin or as third-line (14) after cisplatin/cyclophosphamide and single-agent carboplatin. None of our patients received high-voltage radiotherapy. The median cumulative etoposide dose was 3200 mg/m² (665–6800 mg/m²). Survival after the start of etoposide ranged from 2 to 51 months, median 13 months. The overall response to etoposide as single-agent was 28% with a 2 year survival of 90% for responders and 20% for non-responders.

Here we report two cases of acute leukaemia among patients who had received etoposide as second-line. The first patient, who was 37-years-old, presented with FIGO stage IIb serous cystadenocarcinoma which was treated with cisplatin/epirubicin. The cumulative dose for both agents was 460 mg/m². After 45 months, a local recurrence was treated with 8 cycles of etoposide, cumulative dose 3600 mg/m². Because disease progressed, carboplatin 350 mg/m² was administered 10 times with monthly intervals. 23 months after discontinuation of etoposide, the patient presented with leucocyte counts of 249 × 10⁹/l, anaemia, and thrombocytopenia. Leucocyte differential and bone marrow analysis demonstrated acute myelogenous leukaemia of the FAB M5b subtype. Immunophenotyping revealed expression of CD13, CD14, CD15, CD33, and CDw65 antigens, while antibodies against TdT, CD34, and several B-cell and T-cell antigens were not reactive. 2 days after diagnosis, the patient died of the disease.

The second patient, a 55-year-old woman with FIGO stage IIa serous cystadenocarcinoma was treated with cisplatin/